DOCUMENT RESUME

ED 189 407 CE 026 020

AUTHOR Stacy, John Roger
TITLE Contemporary Concepts of Industrial Arts as Perceived by Teachers and Teacher Educators in Oklahoma.
INSTITUTION Oklahoma State Dept. of Education, Oklahoma City. Div. of Vocational-Technical Education.
PUB DATE Jul 80
NOTE 63p.: Appendixes will not reproduce well due to small type.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Career Exploration: *Curriculum: Curriculum Research: Elementary Secondary Education: *Industrial Arts: *Industrial Arts Teachers: Industrial Education: *Instructional Innovation: Occupational Clusters: Postsecondary Education: *State Curriculum Guides: Statewide Planning: *Teacher Attitudes: Teacher Educators
IDENTIFIERS *Guide for Industrial Arts Education in Oklahoma: Oklahoma

ABSTRACT

A study determined the opinions of industrial arts teachers relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. Data were gathered by a mail opinionnaire sent to all full-time industrial arts teachers from the elementary through university level. They were analyzed by (1) chi-square and Fisher's exact probability tests to compare categorical responses within groups as determined by seven hypotheses, (2) a weighted ranking technique to determine placement of topics within job clusters, (3) a matched pair analysis to determine opinions about administrators' views of industrial arts, and (4) a comparison of mean responses to analyze opinions from industrial arts teachers. The conclusion reached was that although significant differences were detected among opinions of teachers in various categories of characteristics, the teachers generally agreed with the curriculum content reflected in the state plan, and that preservice and inservice training focusing on the content and implementation of the cluster/exploration approach to industrial arts should be provided for teachers and administrators. (The opinionnaire and additional data tables are appended.) (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED189407

CONTEMPORARY CONCEPTS OF INDUSTRIAL ARTS AS PERCEIVED BY TEACHERS AND TEACHER EDUCATORS IN OKLAHOMA

written by
John Roger Stacy

Research Coordinating Unit
State Department of Vocational and Technical Education
1515 W. Sixth Avenue, Stillwater, Oklahoma 74074

July, 1980

CE 026 020

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

William D. Frazier

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

FUNDING INFORMATION

Project Title:	Contemporary Concepts of Industrial Arts as Perceived by Teachers and Teacher Educators in Oklahoma
Project Director:	John Roger Stacy
Source of Project:	This is an inhouse project of the Oklahoma Vocational Research Coordinating Unit, Oklahoma State Department of Vocational and Technical Education
Source of Funds:	Vocational Educational Amendments of 1976, Public Law 94-482, Section 131 (a) and State appropriations for vocational education.
Project Number:	OK 80 131 1009
Disclaimer:	This publication was prepared pursuant to an approved inhouse project of the Oklahoma Vocational Research Coordinating Unit, State Department of Vocational and Technical Education. Project directors undertaking research and development projects under such sponsorship are encouraged to freely express their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Oklahoma State Department of Vocational and Technical Education position or policy.
Nondiscrimination Statement:	The Oklahoma State Department of Vocational and Technical Education does not descriminate on the basis of race, creed, color, national origin, sex, age, veteran status, qualified handicap or disability.

ABSTRACT

Title of Study: CONTEMPORARY CONCEPTS OF INDUCTRIAL ARTS AS PERCEIVED BY TEACHERS AND TEACHER EDUCATORS IN OKLAHOMA

Author: John Roger Stacy

Scope and Method of Study: The purpose of this study was to determine the nature of opinions that industrial arts teachers have relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. This study enlisted the participation of all full-time industrial arts teachers from all levels of the educational system, elementary through university levels.

The data were gathered by a mail opinionnaire and analyzed by (1) the chi-square and Fisher's exact probability tests to compare categorical responses within groups as determined by seven hypotheses, (2) a weighted ranking technique to determine the placement of topics within the job clusters, (3) a matched pair analysis to determine opinions about administrators' views of industrial arts, and (4) a comparison of mean responses to analyze opinions from industrial arts teachers.

Findings and Conclusions: Significant differences in opinions were found concerning the curriculum content reflected in the state plan within six of seven categories of teachers' personal and professional characteristics. The teachers were found to respond consistently in nature to the ranking of topics within job clusters. The teachers' opinions of their administrators' views about industrial arts revealed a majority who feel the program should be based on the traditional curriculum. The mean responses of the teachers' opinions about the state plan revealed reasonablly high mean scores to exist with the exception of only two items. The teacher educators consistently exhibited mean values greater than those of teachers.

The conclusion reached was that although significant differences were detected among opinions of teachers in various categories of characteristics, the teachers generally agreed with the curriculum content reflected in the state plan, and that preservice and inservice training focusing on the content and implementation of the cluster/exploration approach to industrial arts should be provided for teachers and administrators.

TABLE OF CONTENTS

	Page
INTRODUCTION	1
Statement of the Problem	4
Purpose and Objectives of the Study	4
Hypotheses	5
Presentation of Additional Data	7
METHODOLOGY	9
Population	9
Instrumentation	10
Data Collection	12
Treatment of the Data	19
FINDINGS	23
CONCLUSIONS	32
RECOMMENDATIONS	34
APPENDIX A - OPINIONNAIRE	37
APPENDIX B - COVER LETTER	42
APPENDIX C - FOLLOW-UP POSTCARD	44
APPENDIX D - TABLES III THROUGH XII	46

LIST OF TABLES

Table		Page
I.	Opinionnaire Responses	14
II.	Frequency Distributions of Responses to Personal and Professional Characteristics	15
III.	Chi-Square Comparison of Opinions About Industrial Arts Among All Respondents According to Their Years of Age	47
IV.	Chi-Square Comparison of Opinions About Industrial Arts Among All Respondents According to Their Attained Level of Education	48
V.	Chi-Square Comparison of Opinions About Industrial Arts Among All Respondents According to Their Number of Years Having Taught Industrial Arts	49
VI.	Chi-Square Comparison of Opinions About Industrial Arts Among All Respondents According to Their Perception of the Type of Program They Teach	50
VII.	Chi-Square Comparison of Opinions About Industrial Arts Among All Respondents According to Their Levels of Teaching Industrial Arts	51
VIII.	Chi-Square Comparison of Opinions About Industrial Arts Among All Respondents According to Their Years of Industrial Experience	52
IX.	Chi-Square Comparisons of Opinions About Industrial Arts Between Industrial Arts Teachers and Teacher Educators	53
X.	Topics Ranked According to Perceived Importance Within Clusters Contained in the State Plan as Reported by All Respondents According to the Seven Categories of Personal and Professional Characteristics	54
XI.	Matched Comparison Between the Type of Industrial Arts Program Being Taught and the Industrial Arts Teacher's Opinion of Their Administrator's View About the Actual Type of Program Being Taught	55

LIST OF TABLES
(Continued)

Table		Page
XII.	Mean Comparison of Opinions About Industrial Arts Between Industrial Arts Teachers and Teacher Educators	56

INTRODUCTION

The contemporary, rapidly changing technological society in America demands a much different set of skills or competencies, in order for an individual to become a productive member of society, than any generation viewed in the past. It must be realized that students graduating today will be a part of the work force well past the year 2000. Educators have the obligation not only of preparing them adequately for today's market, but of preparing them so that they can change with the times and not become obsolete before their time (Clemmons, 1975). There exists a critical need to teach so that what is learned can successfully be transferred to many situations, to meet many needs, and to provide alternatives in meeting those needs.

The question arrives, how can the institutional system called education do its job and what role can or should industrial arts play? The uniqueness of industrial arts in its role of meeting the needs of the student in the educational process must be considered. As Fuglsby (1978) states:

> People will continue to use tools, machines, energy, materials, and communications. They will apply various processes. Our strength and uniqueness is that through the use of tools, machines, materials, energy, communications and the application of processes, we can teach people to think and act, to meet their needs now and in the future, and to expand their potential (p. 22)

The increasing technological society has focused attention on industrial arts as a curriculum area particularly suited to fulfill its

requirements (Good, 1979). In view of the contemporary concepts presently being implemented into industrial arts programs across our nation, involving the job clusters of construction, manufacturing, transportation and engergy, and communications and media, as well as the incorporation of the American Industrial Arts Student Association (AIASA), industrial arts is one of the most educationally beneficial and rewarding subject areas in which a student can be involved (Litherland, 1979). Students participating in the innovative curriculum of today's industrial arts programs are provided with the opportunity to (1) explore many occupational choices, as well as experiment with the tasks and skills needed to perform those jobs, (2) develop leadership abilities and civic responsibilities through membership in AIASA, and (3) develop craftsmanship and pride in their work through hands-on manipulative skills.

However, no matter how beneficial these contemporary concepts of industrial arts are to rest of the nation, the industrial arts teachers in Oklahoma are not implementing these innovative curricula into their programs, with the exception of a minimal number of exemplary or pilot programs (Winburn, 1979). Is it the traditionalism of Oklahoma industrial arts teachers that is responsible for the nonacceptance of the new concepts? Is it the unfamiliarity of the new concepts? Is it the extra work of learning the new materials scheduling guest speakers and field trips, and staying abreast of the modern technological changes? Or is it apathy? In any case, industrial arts teachers in this state should reevaluate their current curricular functions and objectives in regard to what best reflects modern technological trends. Current practices in familiar areas such as woodworking and metal working must

respond to recent innovations (A Guide for Industrial Arts Education in Oklahoma, 1979).

In order to assist and enable industrial arts teachers to better understand the contemporary concepts of the curriculum and become one unified area of discipline, as compared to each teacher developing his/her own program, a curriculum committee, comprised of industrial arts leaders from within our state, has developed a state plan, A Guide for Industrial Arts Education in Oklahoma (1979). This guide, which had been in the developmental stage for several years, is supported by the State Department of Education and the State Department of Vocational and Technical Education.

Included within this plan are statements of policy, goals, and minimum standards for industrial arts programs. In addition, the guide reflects the relationship of industrial arts to general education, vocational education, and career education, along with the current federal legislation concerning industrial arts. And finally, it includes the scope and methodology needed when implementing the innovative curricula, the recommendations and instrumentation of utilizing the American Industrial Arts Student Association as an integral part of the curriculum, and the explanation of the functions of the industrial arts teacher education programs within the state.

The provisions set forth in this guide should denote far-reaching and significant implications on the industrial arts teachers and programs across our state. Although, whether or not the industrial arts teachers in Oklahoma acknowledge these recommendations is yet to be seen.

Statement of the Problem

Today's educational system in Oklahoma is in need of a discipline that will allow students to become aware of, to explore, and to experiment with several different occupations before they graduate from the public school system, thus enabling them to have a much broader base of experience in which to make career decisions (Reynolds, 1978). Industrial arts education does provide contemporary curriculum concepts to accomplish this need. Although, in general, the industrial arts public school teachers and teacher educators in Oklahoma have not acknowledged the implementation of these contemporary concepts and innovative curricula as reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. As a result, there is a definite lack of contemporary programs existing within the field of industrial arts throughout the state.

Purpose and Objectives of the Study

The purpose of this study is to identify the opinions that industrial arts teachers have relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. The specific objectives of the study were:

1. Identify any relationship between the personal and professional characteristics of industrial arts teachers and their opinions about the curriculum content as reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

2. Identify any relationship between the personal and professional characteristics of industrial arts teachers and their opinions about the content within the job clusters of industrial arts as reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.
3. Make recommendations for further research based upon the finding of this study.

Hypotheses

The null hypotheses for the study will test certain personal and professional characteristics that may be impacting upon the opinions of industrial arts teachers toward the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. Items 8 through 38 on the opinionnaire (see Appendix A) lent themselves to be analyzed utilizing statistical treatment as revealed in the hypotheses to follow. Questions 39 through 50 on the opinionnaire did not lend themselves to statistical treatment, thus a weighted ranking system was used. (See Presentation of Additional Data for more information.) The following seven hypotheses will be tested:

H_1: There is no significant difference between the opinions of industrial arts teachers compared to their years of age, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. (This hypothesis refers to objective one.)

H_2: There is no significant difference between the opinions of industrial arts teachers compared to their attained level of

education, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. (This hypothesis refers to objective one.)

H_3: There is no significant difference between the opinions of industrial arts teachers compared to their number of years having taught industrial arts, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. (This hypothesis refers to objective one.)

H_4: There is no significant difference between the opinions of industrial arts teachers compared to the type of program being taught, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. (This hypothesis refers to objective one.)

H_5: There is no significant difference between the opinions of industrial arts teachers at the various levels of teaching industrial arts, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. (This hypothesis refers to objective one.)

H_6: There is no significant difference between the opinions of industrial arts teachers compared to their years of industrial experience, on any given item, relative to the curriculum content reflected in the state plan, A Guide for

Industrial Arts Education in Oklahoma. (This hypothesis refers to objective one.)

H_7: There is no significant difference between the opinions of industrial arts public school teachers and those of industrial arts teacher educators, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. (This hypothesis refers to objective one.)

The researcher set a .05 level of significance for acceptance or non-acceptance of the hypotheses.

Presentation of Additional Data

In addition to the testing of the aforestated hypotheses, it was necessary, due to the nature of the type of information desired, to analyze the responses to questions 39 through 50 on the opinionnaire (see Appendix A), utilizing a weighted ranking method of comparison. The desired information is as follows:

1. To show the relationship between the personal and professional characteristics of industrial arts teachers and their opinions about the ranking of the cluster topics, as reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. (This information refers to objective two.)

And finally, it was necessary, due to the nature of the type of information desired, to directly match the various responses from two

categories of personal and professional characteristics on the opinionnaire, as opposed to utilizing a statistical test. The desired information is as follows:

2. To determine the relationship between the industrial arts teachers' opinions of their administrators' view about industrial arts, as compared to the actual type of program being taught in the school.

METHODOLOGY

Introduction

The major purpose of this study is to identify the opinions that industrial arts teachers have concerning curriculum content as reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma. This section is devoted to the collection and analysis of data pertaining to the purpose and objectives of the study, and will be divided into the following sections: (1) Population, (2) Instrumentation, (3) Data Collection, and (4) Treatment of the Data.

Population

This study enlisted the participation of all full-time industrial arts teachers from all levels of the educational system, including elementary schools, middle and junior high schools, senior and mid-high schools, as well as the nine industrial arts degree granting public state universities in Oklahoma. At the public school level, teachers of industrial arts classes who taught less than four hours were clas-

sified as "part-time" teachers and not included within the population. In addition, due to the extremely low respondence of elementary school industrial arts teachers, which totalled two, it was the recommendation of the researcher's advisory committee to omit them from the study to eliminate complications imposed by minimum numbers requirements of the statistical tests procedures used.

According to the State Supervisor of Industrial Arts, as of February, 1980, there were 515 industrial arts teachers in the public schools of Oklahoma and 45 industrial arts teacher educators from public state universities in Oklahoma whose major responsibility was that of teaching courses directly related to the preparation of industrial arts teachers. The names and addresses for these teachers and teacher educators were obtained from the Industrial Arts Division of the State Department of Vocational-Technical Education, Stillwater, Oklahoma. The entire identified population was utilized in the study.

Instrumentation

Due to the fact that the study population was on the statewide level and there existed time and travel constraints, a mailout opinionnaire (see Appendix A) was utilized as the delivery system for the collection of responses. The opinionnaire was developed by the researcher with assistance form the researcher's major adviser and the State Supervisor of Industrial Arts, with recommendations from the researcher's advisory committee, based upon the state plan, A Guide for Industrial Arts Education in Oklahoma.

The objective of the opinionnaire was to allow all respondents the opportunity to express their opinions about the state plan, in regard to the followng categories: (1) General Beliefs about Industrial Arts; (2) Experiences With Industrial Arts Teaching; (3) Elementary School Level Curriculum; (4) Middle and Junior High School Level Curriculum; and (5) Senior and Mid-High Level Curriculum. The respondents were asked to classify their opinions as being in one of the following response groups: (1) Strongly Agree (SA); (2) Agree (A); (3) Uncertain (?); (4) Disagree (D); or (5) Strongly Disagree (SD). An additional sixth category was contained enabling the respondents to select a first, second, and third choice from a list of 10 to 11 topics depending upon which of the four clusters was in question, as listed in the state plan. The choice was based according to the perceived importance of each topic.

The items within each of the six categories listed above were taken directly from the state plan, A Guide for Industrial Arts Education in Oklahoma, with the exception of the first and second categories, of which contain questions conceived as being pertinent to this study by the State Supervisor of Industrial Arts, the researcher's advisory committee chairman and the researcher.

The desired personal and professional information, necessary to form the basis for a comparative analysis of the responses, was placed on the first page of the instrument in order to allow the respondent to answer questions he/she was certain and felt more comfortable in answering (Gorman, 1979). Personal and professional information desired included: age, level of education, years of teaching industrial arts type of program being taught, grade level presently teaching, years of

industrial experience, and the teacher's opinion of his/her administrator's view about industrial arts programs. The request for names was withheld due to numerous findings that respondents will answer the questions more openly and more candidly if not identified. Only a code number was assigned to each opinionnaire to enable a follow-up postcard to be mailed out to the nonrespondents of the initial mailout. In addition, on the final page of the opinionnaire, a statement was made announcing the results of the study would be available for those persons requesting them, in order to allow interested participants the opportunity to obtain the findings of the study.

The cover letter (see Appendix B) which accompanied the opinionnaire contained a statement of purpose for the study, a brief amount of information about the state plan, and a data by which the completed opinionnaire should be returned. Also included was an endorsement of the study by Mr. Harold J. Winburn, State Supervisor of Industrial Arts in Oklahoma, in hopes of increasing participation among respondents. And most importantly, in further attempts to increase the percentage of returned opinionnaries, a stamped, pre-addressed envelope (see Appendix C) was included within the mailout.

Data Collection

The aforementioned opinionnaire and cover letter were mailed to 515 industrial arts public school teachers and 45 teacher educators during the last week in February, 1980. It was decided based upon recommendations by the Director of Research at the State Department of

Vocational-Technical Education, Stillwater, Oklahoma, that a deadline date be set to allow the respondents two weeks in which to respond and return the opinionnaire. It was at this point in time that the researcher had received approximately 73 percent of the eventual 44 percent total return rate of the opinionnaires (see Table I). Immediately following the initial deadline date, a follow-up postcard (see Appendix C) was mailed to all nonresponding participants, with again a two week deadline, reminding them to complete and return the opinionnaire. Although, due to the constant flow of opinionnaires being returned after the second set deadline, it was most beneficial not to maintain strict enforcement of a deadline date, and in so doing, accepted opinionnaries until the time the data was keypunched onto computer cards, being approximately three weeks after the second deadline.

At the conclusion of the data collection, 249 responses had been tallied. Of those, 244, or 44 percent of the total surveyed, were usable responses. The five unusable responses are attributed to either changes in the teacher's occupation or insufficient responses from elementary industrial arts teachers and industrial arts administrators to conduct valid statistical tests. Table I presents a frequency distribution and percentage breakdown of the usable responses of the industrial arts teachers at the public school level as well as the industrial arts teacher educators.

TABLE I

OPINIONNAIRE RESPONSES

Group	Total Population	Number Responses	Percentage Responses Within Group	Total Percentage of all Responses
IA Teachers at the Public Schools	515	216	42*	87*
IA Teacher Educators	45	28	62*	11*
Unusable Responses				2*
Total	560	244	44*	100

*rounded off to the nearest hundredth

TABLE II

FREQUENCY DISTRIBUTIONS OF RESPONSES TO PERSONAL AND PROFESSIONAL CHARACTERISTICS

	Years of Age (Question 1)				
	21-30	31-40	41-50	Over 50	Total
Respondents	40	91	61	50	242

	Attained Level of Education (Question 2)				
	Bachelors	Masters	Masters + 30 hrs.	Doctorate	Total
Respondents	94	87	42	19	242

TABLE II (CONTINUED)

FREQUENCY DISTRIBUTIONS OF RESPONSES TO PERSONAL AND PROFESSIONAL CHARACTERISTICS

	Years Having Taught Industrial Arts (Question 2)				
	1-3	4-8	9-15	Over 15	Total
Respondents	35	64	62	81	242

	Type of Program Being Taught (Question 4)			
	Cluster/ Exploratory (C/E)	Traditional (T)	Combination of (C/E) & (T)	Total
Respondents	14	119	109	242

TABLE II (CONTINUED)

FREQUENCY DISTRIBUTIONS OF RESPONSES TO PERSONAL AND PROFESSIONAL CHARACTERISTICS

	Levels of Teaching Industrial Arts (Question 5)				
	Jr. High/ Middle	Senior/ Mid-High	Combination of Both	University	Total
Respondents	59	107	48	28	242

	Industrial Experience (Question 6)				
	Less than 1 yr.	1-2 yrs.	3-5 yrs.	Over 5 yrs.	Total
Respondents	30	41	70	99	242

TABLE II (CONTINUED)

FREQUENCY DISTRIBUTIONS OF RESPONSES TO PERSONAL AND PROFESSIONAL CHARACTERISTICS

	Teacher's Opinion of Adminstrator's View of Industrial Arts Program Within School (Question 7)				
	Cluster/ Exploratory (C/E)	Traditional (T)	Comb. of (C/E) & (T)	Support not directed to any area	Total
Respondents	15	87	67	73	242

NOTE: These responses include the industrial arts teachers at the public school and university levels.

Treatment of the Data

The opinionnaire (Appendix A) was comprised of 31 questions dealing with beliefs, experiences, and elementary, middle and junior high, and senior and mid-high school curricula, as well as 12 questions allowing respondents to rank topics within each of the four job clusters of industrial arts according to the perceived importance of each. In order to form a basis for comparisons of responses, seven questions were included concerning personal and professional information.

Concerning the 31 questions dealing with various topics, each respondents was asked to circle one of the symbols preceding each of the questions. The symbols were stated as follows: SA for Strongly Agree, A for Agree, ? for Uncertain, D for Disagree, and SD for Strongly Disagree. The symbols were then converted to point values shown as follows: SA equaled 5 points, A equaled 4 points, ? equaled 3 points, D equaled 2 points, and SD equaled 1 point. The point values were then entered onto fortran coding forms, keypunched onto computer cards and entered into the computer utilizing the chi-square statistical treatment. The chi-square test was selected because the data consisted of frequencies falling into distinct categories.

For this study, cells were collapsed where appropriate to meet at least one of the criteria listed above. However, in extreme cases in which to collapse the cells any further would distort or allow the meaning of the comparison to be lost, the Fisher's Exact Probability Test was used. As Siegel (1956) suggests, the Fisher's Exact Probability Test is an extremely useful nonparametric technique for ana-

lyzing discrete data when the given responses are small in size. Cochran (1954), in his recommendations for alternative tests which may be used if the cell totals are too small to enable a proper and meaningful chi-square test, also suggests the use of the Fisher test.

The major concern in the statistical analysis of data in this study on questions 8 through 38 was to determine if there was agreement among those persons surveyed and, if not, whether the differences were significant. The degree of relationship was not considered to be a major factor.

Due to the nature of the ranking of topics in questions 39 through 50, it was not intended to utilize the chi-square of Fisher's Exact Probability statistical tests, thus based upon recommendation made by the Director of Research at the State Department of Vocational-Technical Education, a weighted ranking technique was used to establish a rank order of the topics within the four clusters of the industrial arts curriculum as reflected in the state plan. Each respondent was requested to select a first, second, and third choice form a list of 10 to 11 topics depending upon which of the clusters was in question. The assignment of points placed upon each choice was as follows three points for first choice, two points for second choice, and one point for third choice. The final rank order was determined by compiling the total of all responses within each of the cluster areas (see Table X through XVI).

Still another method of data anlysis utilized within the study involved a direct matching technique whereas the three types of indusrial arts programs being taught were matched item for item with the industrial arts teachers' opinions of their administrator's view about

the type of program which should be taught within the school. The types of industrial arts programs listed as choices on the opinionnaire were (a) the cluster/exploration approach, (b) the traditional approach, and (c) a combination of both (a) and (b). The types of industrial arts programs as revealed on the opinionnaire concerning the administrator's view listed the same three choices with an additional topic stated as: (d) support is not directed to any particular area.

As programmed into the computer, when the "a" selection of the type of porgram was matched to the "a" selection of the administrator's opinion, the data was revealed as being in agreement. The same situation held true for the matching of "b" to "b" and "c" to "c". In the next matched group, the outcome data revealed a semi-agreement. Those matching were as follows: "a" to "c," "b" to "c," "c" to "a," and "c" to "b." The most important matched set, which revealed the "nonagreement" or "mismatched" programs, was programmed into the computer as "a" to "b" and "b" to "a." As stated before, the additional topic labeled "d" listed under the administrator's viewpoints, allowed teachers the opportunity to yet another way of explaining their administrator's opinion of industrial arts programs and was not utilized as a comparison variable. The results of this and other techniques of analyzing data are revealed in Chapter IV.

A final method of data analysis utilized within the study involved a presentation of the mean of the responses made by industrial arts public school teachers and industrial arts teacher educators (Table XVIII) on 31 items, numbered 8 through 38 on the opinionnaire. In order to provide a basis from which to compare these two groups, the

mean of all respondents was included within the presentation.

The individual mean scores were determined by first assigning point values to the item responses in the following manner, Strongly Agree (SA) equaled five points, Agree (A) equaled four points, Uncertain (?) equaled three points, Disagree (DA) equaled two points, and Strongly Disagree (SD) equaled one point. Next, the total number of responses in each of the five response categories was multiplied by the point value assigned to that response category. The sum of those five values was then divided by the total sum of all teachers responding to the item which determined the mean. Each mean score was rounded to the nearest hundredth. The higher the mean, the greater the agreement and the lower the mean, the lesser the agreement.

FINDINGS

Concerning the chi-square and Fisher's exact probability test, the .05 level was used to determine whether or not a significant difference existed between responses as stated in the seven hypotheses as follows:

H_1: There is no significant difference between the opinions of industrial arts teachers compared to their years of age, on any given question, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

In looking at the findings related to Hypothesis One, it has been revealed that there is a significant difference between the opinions of industrial arts teachers compared to their years of age, on one item, relative to the curriculum content reflected in the state plan. Industrial arts teachers, depending upon their years of age, had significantly different opinions about exposing students, at an early age, to career opportunities in a variety fo fields within the elementary level of industrial arts. It is important to recognize that although a significant difference was detected, a majority of each group generally agreed with the item. (Table III)

H_2: There is no significant difference between the opinions of industrial arts teachers compared to their attained level of education, on any given item, relative to the curriculum contnet reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

Indicative of the findings related to Hypothesis Two, it has been found that there is a significant difference between the opinions of industrial arts teachers compared to their attained level of education, on two items, relative to the state plan. Industrial arts teachers, depending upon their attained level of education, had significantly different opinions about (1) whether or not industrial arts programs should have advisory councils, as well as (2) industrial arts programs at the junior high or middle school level being centered around the job clusters of construction, manufacturing, communications, and transportation. The response data indicated that, in general, the group of teachers who had bachelors and masters degrees seemed to agree more with the industrial arts programs having an advisory council than did those teachers having masters degrees plus 30 hours and doctorate degrees. Although the groups reversed their selections of agreement and disagreement on the later stated item, as the teachers with masters degrees plus 30 hours and doctor's degrees were found to be more in agreement with the item than those teachers with bachelors and masters degrees. (Table IV)

H_3: There is no significant difference between the opinions of industrial arts teachers compared to their number of years having taught industrial arts, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

Related to Hypothesis Three, the findings reveal that there is a significant difference between the opinions of industrial arts teachers compared to their number of years having taught industrial arts, on two items, relative to the curriculum content reflected in the state plan. Industrial arts teachers, depending upon the number of years having taught industrial arts, had significantly different opinions about (1) the use of the state plan for industrial arts as a model for teaching industrial arts in Oklahoma, as well as (2) industrial arts providing all students with the opportunity to explore industry and the world of work at the middle or junior high level. The majority of the teachers with four to 15 years of teaching experience were found to either disagree or have uncertain opinions about the use of the state plan as opposed to the teachers with one to three year and over 15 years of teaching experience in general being in agreement with the item. Concerning the second item listed, the data was indictive that although a significant difference was detected, a majority of the groups were in agreement with the item. (Table V)

H_4: There is no significant difference between the opinions of

industrial arts teachers compared to the type of program being taught, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

In looking at the findings related to Hypothesis Four, it has been revealed that there is no significant difference between the opinions of industrial arts teachers compared to the type of program being taught, on any given item, relative to the curriculum content reflected in the state plan. Industrial arts teachers in all types of programs had no significant differences of opinions concerning any item on the opinionnaire. (Table VI)

H_5: There is no significant difference tetween the opinions of industrial arts teachers at the various levels of teaching industrial arts, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

Indicative of the findings related to Hypothesis Five, it has been found that there is a significant difference between the opinions of industrial arts teachers at the various levels of teaching industrial arts, on eight items, relative to the curriculum content reflected in the state plan. Industrial arts teachers at various levels of teaching, had significantly different opinions about (1) industrial arts programs at the university level providing the study of how to organize and manage student clubs; (2) industrial arts programs at the junior high or middle school

level being centered around the job clusters of construction, manufacturing,communications, and transportation; (3) industrial arts teachers using the state plan for industrial arts as a model for teaching industrial arts in Oklahoma; (4) industrial arts teachers sponsoring an industrial arts club; (5) industrial arts at the elementary level exposing students, at any early age, to career opportunities in a variety of fields; and finally, industrial arts at the senior high level providing (6) basic instruction to students entering the labor force before graduation or immediately thereafter, (7) practical situations pertaining to the industrial world or work and its competitive nature, and (8) students with the opportunity to participate in the American Industrial Arts Student Association (AIASA). (Table VII)

H_6: There is no significant difference between the opinions of industrial arts teachers compared to their industrial experience, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

Related to Hypotheses Six, the findings reveal that there is a significant difference between the opinions of industrial arts teachers compared to their years of industrial experience, on three items, related to the curriculum content reflected in the state plan. Industrial arts teachers, depending upon their years of industrial experience, had significantly different opinions about industrial arts teach-

ers (1) having industrial experience, (2) having advisory councils, and (3) providing basic instruction to students planning to pursue advanced studies and careers in such areas as applied and technical science. The data indicates that, in general, the more years of industrial experience a teacher has, the more that teacher agrees with items (1) and (3) above. This conclusion was not necessarily true for item (2) above. (Table VIII)

H_7: There is no significant difference between the opinions of industrial arts public school teachers and those of industrial arts teacher educators, on any given item, relative to the curriculum content reflected in the state plan, A Guide for Industrial Arts Education in Oklahoma.

Indicative of the findings related to Hypothesis Seven, it may be concluded that there is a significant difference between the opinions of industrial arts public school teachers and teacher educators, on nine items, relative to the curriculum content reflected in the state plan. Industrial arts public school teachers and teacher educators had significantly different opinions about (1) industrial arts programs at the university level providing the study of how to organize and manage student clubs, (2) student organizations (AIASA) being centered around the job clusters of construction, manufacturing, communications, and transportation, (4) using the state plan for industrial arts as a model for teaching industrial arts in Oklahoma, (5) sponsoring a club, providing all students at the middle or junior high level the

opportunity to (6) explore industry and the world of work, (7) to attain knowledge of industrial, vocational, and related services, and (8) to participate in the American Industrial Arts Student Association (AIASA), and finally, (9) providing all students at the senior high level the opportunity to participate in the American Industrial Arts Student Association (AIASA). (Table IX).

The second method involved a weighted ranking technique which was used on responses from items 39 through 50 on the opinionnaire. This section of items dealt with the ranking of topics, according to perceived importance of each, within the clusters of construction, transportation, communications, and manufacturing. Three points were assigned to each first choice response, two points to each second choice response, and one point to each third choice response. The respondents were to select from a list of 10 to 11 topics depending upon which of the clusters was in question. A final rank order was then determined by totaling the responses after the point values had been assigned.

According to the findings pertaining to the final rank order of cluster topics, in relation to the seven categories of personal and professional characteristics, the industrial arts teachers in Oklahoma are in agreement concerning the first, second, and third choices of topics ranked according to their perceived importance within the four clusters with only one exception. The industrial arts teachers agree that within the Construction cluster, the most important topic is "Design," followed by "Wood Frame Construction" and "Preparing to Build;" within the Transportation cluster, the most important topic is "Occupations in the Transportation Cluster," followed by "History of

Transportation" and "Future Transportation" and in the case of the exception "Land Transportation;" within the Communication cluster, the most important topic is "Graphic Arts," followed by "Television Broadcasting" and "Data Transmission;" and finally, within the Manufacturing cluster, the most important topic is "Research and Design," followed by "Materials and Processes," and "Getting a Job." (Table X)

The third method of statistical analysis involved the use of a matched pairs analysis between the industrial arts teachers' opinions of their administrators' view about industrial arts, as compared to the actual type of program being taught in the school. Three categories were formed in which the results were listed as being either in agreement, semi-agreement, or nonagreement.

Concerning the responses to the matched pairs analysis used to determine the relationship between the industrial arts teachers' opinions of their administrators' views about industrial arts, as compared to the actual type of program being taught in the school, it has been found that in the teacher's opinion the majority of the administrators are in agreement or in semi-agreement with the type of program being taught. Although, there exists at least three situations where teachers have implemented the "Cluster/Exploration" type of program, but according to the teachers' opinions, their administrators' views about the type of program which should be taught was revealed to be "Traditional." (Table XI)

The fourth and final method employed was a comparision of the mean responses to items eight through 38 on the opinionnaire, between industrial arts public school teachers and industrial arts teacher educators. In addition, the mean from both groups combined were analyzed in

order to allow a basis from which to make further comparisons.

According to the findings concerning the mean responses to each of the items listed on the opinionnaire by public school teachers and teacher educators, it has been revealed that both groups are in general agreement with the curriculum content as reflected in the state plan. Responses also indicate that the teacher educators agree more strongly with the curriculum content reflected in the state plan than do public school teachers with the exception of three items. The teacher educators (1) agree less that industrial arts teachers should have industrial experience, (2) agree less that industrial arts at the senior high level should provide basic instruction to students entering the labor force before graduation or immediately thereafter, and (3) not only agree less, but as the responses indicate, they disagree that industrial arts programs should have advisory councils. Further findings indicate that both groups feel more information should be provided about the cluster/exploration type of programs, and agree that teachers should have the opportunity to attend workshops and seminars on this topic. Concerning the American Industrial Arts Student Association (AIASA), the teacher educators have revealed being in full agreement with public school teachers providing students with the opportunity to participate; yet the public school teachers, although revealing an agreement to this item, were not in as strong agreement. The public school teachers also reflected a difference of opinions from the teacher educators, as they generally disagreed that teacher education departments in Oklahoma are adequately preparing industrial arts teachers to know what they should teach as they begin their first few years of teaching. And finally, concerning the use of the state plan, A Guide

for Industrial Arts Education in Oklahoma, as a model for teaching industrial arts in Oklahoma, the teacher educators again agreed more strongly than did public school teachers, whose responses revealed only a very slight agreement with its use. (Table XII)

Conclusions

The following conclusions were drawn based on interpretation of data relative to this study:

1. Indicative of the findings pertaining to the seven hypotheses, the industrial arts teachers in Oklahoma do have differing opinions about the state plan for industrial arts. These differences are possibly due to their individual teaching situations, the philosophical base from which they believe, or the lack of understanding they have concerning the contemporary approach. Thus, it may be concluded that there does exist a need for more information to be provided to all industrial arts teachers concerning the theory and implementation of the contents within the state plan.
2. As revealed in the findings, the industrial arts teachers at the public school level reflect a need to be more adequately prepared to teach industrial arts upon graduation from a teacher education program. The first few years of teaching industrial arts seem to be the most critical years for adequate preparation as reflected by responses to a question of this nature being the lowest of all mean responses recorded within the survey.

3. From the findings revealed from the weighted ranking technique used to determine the rank order of topics within the four job clusters, it may be concluded that there is a need for a task force of teacher educators, public school teachers and industrial arts supervisors, and state department personnel be organized to review the established curriculum guides presently being utilized within the state to acknowledge whether or not emphasis is being placed in the appropriate areas.

4. The greater than average agreement to items related to AIASA on the opinionnaire compared to the actual number of organized chapters in the state leads the researcher to believe that the industrial arts teachers in Oklahoma need more information concerning the implementation and incorporation of AIASA within the industrial arts program.

5. Due to the findings relative to the industrial arts teachers' opinions about their administrators' views concerning the type of industrial arts programs which should be taught within the schools, it may be concluded that there exists a need for administrators to be provided with more information concerning the curriculum content for industrial arts as reflected in the state plan. The traditional approach, as the majority of the teachers feel their administrator is in agreement with, is definitely a proven and acceptable approach, but with a better understanding of the state plan for industrial arts the administrators might see the need for a change to the cluster/exploration approach.

6. Indicative of the findings from the comparison of mean scores from public school industrial arts teachers as compared to teacher educators, the teacher educators were consistently found to be in greater agreement with the state plan than were the public school teachers. This difference could possibly be attributed to (1) the teacher educators' professionalism as they see the need the change from the traditional to the cluster/exploration approach, (2) the incongruency between the cluster/exploration curriculum and the purpose and objectives within a particular school system, (3) the lack of familiarity the public school teachers may have with the new approach, or even (4) the feeling of traditionalism on the part of public school teachers. Thus, it is concluded that further study should be made in order to ascertain these unanswered questions, as well as other factors which may have an impact on the situation.

Recommendations

In view of the data the following recommendations seem appropriate. The recommendations are aimed at curriculum improvement and enhancement of the industrial arts programs in Oklahoma:

1. Workshops and seminars should be provided based on the theory and implementation of the cluster/exploration curriculum concepts, as well as involving aspects of career education.
2. Teacher education preservice curricula should be reviewed and updated in order to more adequately prepare industrial arts

teachers to know that they should teach as they begin their first few years of teaching.

3. A task force should be implemented to review the established state department curriculum materials for industrial arts in light of the findings of this study. Particular investigation should be made in regard to the cohesiveness of the topics ranked by teachers within each job cluster and those emphasized with the curriculum guides.
4. Teacher education courses, workshops, seminars, and programs should be provided concerning pertinent information and implementation guidelines pertaining to the American Industrial Arts Student Association (AIASA).
5. Administrators need to be provided with more information about the cluster/exploration approach to industrial arts. The fact that 36 percent of the teachers felt that their adminstrators thought the traditional approach should be utilized may reveal that each lacks familiarity with the innovative approach.
6. Further study should be conducted relating to the differences of opinions between teacher educators and public school teachers relative to the industrial arts curriculum content within both the public school and teacher education programs. This study has produced data revealing the teacher educator's opinions to be consistently more in agreement concerning the various aspects of industrial arts than those of public school teachers.

7. Further study should be conducted in other states which have a similar state plan for industrial arts, in order to ascertain the opinions of their respective teachers concerning the curriculum suggested within.

APPENDIX A

OPINIONNAIRE

-- OPINIONNAIRE --

FOR SEEKING OKLAHOMA

INDUSTRIAL ARTS TEACHERS' OPINIONS

RETURN DATE
MARCH 7, 1980

Introduction

The purpose of this study is to identify beliefs and perceptions of industrial arts teachers relating to the curriculum content of industrial arts in the public schools in Oklahoma. It is not necessary to put your name on this questionnaire. The number in the upper right hand corner of this page is only to enable a follow-up mailout to be sent to you.

A. General Information

Directions: Please check the appropriate answer below.

1. Your age

____a. 21-30
____b. 31-40
____c. 41-50
____d. over 50

2. Education-highest level attained

____a. Bachelors
____b. Masters
____c. 30 hrs. above Masters
____d. Doctorate

3. Years of teaching industrial arts

____a. 1-3
____b. 4-8
____c. 9-15
____d. over 15

4. I consider that I am teaching

____a. the cluster/exploration approach.
____b. the traditional approach.
____c. a combination of a and b.

5. Grade level presently teaching

____a. Elementary School
____b. Jr. High or Middle School
____c. High or Mid-High School
____d. Combination of b and c

6. Industrial Experience

____a. less than 1 year
____b. 1-2 years
____c. 3-5 years
____d. over 5 years

7. In my opinion, the administration at my school believes industrial arts should be

____a. innovative (cluster/exploration).
____b. traditional (metals, woods, drafting).
____c. a combination of both a and b.
____d. Support is not directed to any particular area.

Directions: Below is a list of statements concerning industrial arts in public schools in Oklahoma. Circle one of the symbols preceding each of the following statements:

SA--Strongly Agree
A--Agree
?--Uncertain
D--Disagree
SD--Strongly Disagree

B. General Beliefs about Industrial Arts

SA A ? D SD 8. Industrial arts should enable students to make broad-based career decisions.

SA A ? D SD 9. Industrial arts teachers should have industrial experience.

SA A ? D SD 10. Industrial arts programs at the university level should provide the study of how to organize and manage student clubs.

SA A ? D SD 11. Beginning industrial arts teachers should be provided with some sort of curriculum guide in order to know what subjects should be taught at different levels.

SA A ? D SD 12. Every industrial arts program should have an advisory council.

SA A ? D SD 13. It is good that the United States Office of Education has recognized the American Industrial Arts Student Association-AIASA as one of the seven vocational student organizations along with FFA, FHA, FBLA, VICA, DECA, and HOSA.

SA A ? D SD 14. Student organizations (AIASA) should be an integral part of the industrial arts curriculum.

SA A ? D SD 15. Industrial arts programs at the junior high or middle school level should be centered around the job clusters of construction, manufacturing, communications, and transportation.

SA A ? D SD 16. The teacher education departments in Oklahoma are adequately preparing industrial arts teachers to know what they should teach as they begin their first few years of teaching.

SA A ? D SD 17. Parlimentary procedure, when used in context of how to conduct a business meeting, should be a part of the industrial arts curriculum.

C. Experiences with Industrial Arts Teaching

I feel industrial arts teachers should:

SA A ? D SD 18. be provided with more information about the cluster/exploration concepts.

SA A ? D SD 19. have the opportunity to attend workshops and seminars which would aid the teacher in learning about the cluster/exploration concepts.

SA A ? D SD 20. use the state plan for industrial arts as a model for teaching industrial arts in Oklahoma.

SA A ? D SD 21. sponsor an industrial arts club.

D. Elementary School Level Curriculum

Industrial arts in the elementary level should:

SA A ? D SD 22. support general education objectives.

SA A ? D SD 23. place emphasis upon realistic experiences including exploration of tools, materials, and processes.

SA A ? D SD 24. allow children to express themselves creatively in the construction of two and three dimensional objects.

SA A ? D SD 25. be considered the responsibility of the classroom teacher.

SA A ? D SD 26. expose students, at an early age, to career opportunities in a variety of fields.

E. Middle and Junior High School Level Curriculum

Industrial arts at the middle or junior high level should:

SA A ? D SD 27. provide all students with the opportunity to explore industry and the world of work.

SA A ? D SD 28. provide opportunities for attaining knowledge of industrial, vocational and related pursuits.

SA A ? D SD 29. improve the ability of the students with regard to choosing, buying, and using the goods and services of industry.

SA A ? D SD 30. provide students with the opportunity to participate in the American Industrial Arts Student Association (AIASA).

F. Senior High School Level Curriculum

Industrial arts at the senior high level should:

SA A ? D SD 31. provide basic instruction to students desiring to explore further the vocational, cultural understandings and consumer concepts of American industry.

SA A ? D SD 32. provide basic instruction to students planning to pursue advanced study and career in such areas as applied and technical science.

SA A ? D* SD 33. provide basic instruction to students entering the labor force before graduation or immediately thereafter.

SA A ? D SD 34. provide basic instruction to students seeking instructional opportunities for developing leisure time activities.

SA A ? D SD 35. provide practical situations pertaining to the industrial world of work and its competitive nature.

SA A ? D SD 36. provide basic skills which are useful in a variety of occupations and for occupational adjustments.

SA A ? D SD 37. complement the vocational programs in the comprehensive high school and area vocational-technical schools.

SA A ? D SD 38. provide students with the opportunity to participate in the American Industrial Arts Student Association (AIASA).

C. Curriculum Content

Directions: The following questions involve the four job clusters of industrial arts at the middle or junior high school exploration level. Rank the three topics which you feel are the most important in each area.

Construction Cluster

_____39. First Choice

_____40. Second Choice

_____41. Third Choice

Topics

1. Design
2. Preparing to Build
3. Clearing a Site
4. Excavation
5. Composition of Concrete
6. Concrete-Forming and Finishing
7. Wood Frame Construction
8. Electrical Wiring
9. Plumbing
10. Masonry
11. Obtaining a Job

Transportation Cluster

_____42. First Choice

_____43. Second Choice

_____44. Third Choice

1. History of Transportation
2. Land Transportation
3. Local and Suburban Transit
4. Highway Transportation
5. Rail Transportation
6. Unions and Collective Bargaining
7. Aerospace Transportation
8. Water Transportation
9. Future Transportation
10. Occupations in the Transportation cluster

Communication and Media Cluster

_____45. First Choice

_____46. Second Choice

_____47. Third Choice

1. Television Broadcasting
2. Radio Broadcasting
3. Publishing
4. Graphic Arts
5. Journalism
6. Commercial Art
7. Camera Technique and Film Processing
8. Fundamentals of Photographic Printing
9. Development of the Telephone
10. Telephone Communication
11. Data Transmission

Manufacturing Cluster

_____48. First Choice

_____49. Second Choice

_____50. Third Choice

1. Research and Design
2. Getting a Job
3. Materials and Processes
4. Casting and Molding
5. Forming
6. Separating
7. Combining
8. Assembling
9. Finishing
10. Industrial Product Management
11. Personnel Management

THE RESULTS OF THIS STUDY WILL BE AVAILABLE FOR THOSE WHO REQUEST THEM.

4

APPENDIX B

COVER LETTER

Votech
OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

February 26, 1980

Dear Fellow Industrial Arts Teacher:

Industrial arts appears to be at a "crossroads" concerning the traditional and pre-vocational curriculum. We are making a state-wide study of all full-time industrial arts teachers in Oklahoma in order to ascertain thinking on this issue.

Recently, a copy of the state plan, A Guide for Industrial Arts Education in Oklahoma, was sent to you. We have developed an opinionnaire based upon the contents of this plan and we are asking that you respond to each statement presented. Regardless of whether or not you have had a chance to familiarize yourself with the contents of the plan, your response is of vital importance.

Please help us by returning the completed opinionnaire by March 7, 1980 using the enclosed pre-addressed, postage-paid envelope.

Sincerely,

Roger Stacy
Research Coordinator

Harold Winburn
State Supervisor of
Industrial Arts

The Oklahoma State Department of Vocational and Technical Education does not discriminate on the basis of race, creed, color, national origin, sex, age, veteran status, qualified handicap or disability.

APPENDIX C

FOLLOW-UP POSTCARD

State Department of Vocational
and Technical Education
1515 West 6th Avenue
Stillwater, OK 74074

Non-Profit Org.
U.S. Postage
PAID
Stillwater, OK
Permit No. 244

March 11, 1980

Fellow Industrial Arts Teacher:

Two weeks ago, an opinionnaire concerning your beliefs about Industrial Arts was mailed to you. Your response to this opinionnaire is of vital importance as we are seeking to attain responses from all Industrial Arts teachers in Oklahoma.

Please, if you would, complete the opinionnaire and mail it to us by March 21, 1980.

Sincerely,

Roger Stacy
Harold Winters

APPENDIX D

TABLES III THROUGH XII

TABLE III

CHI-SQUARE COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS AMONG ALL RESPONDENTS ACCORDING TO THEIR YEARS OF AGE

Item	Topic	X^2	df	Probability
	General Opinions			
8.	I.A. helps make career decisions	4.27	2	.1183
9.	Teachers should have ind. exp.	11.55	6	.0727
10.	Course on organizing clubs	2.72	6	.8431
11.	Curriculum guides for new teachers	.004	1	.9826
12.	All progs. need advisory councils	7.63	6	.2664
13.	AIASA-USOE's recognition is good	.0	6	1.0000
14.	AIASA--integral part of curriculum	8.62	6	.1960
15.	Clusters at junior high	11.87	6	.0649
16.	Beg. teachers have adequate trng.	6.43	6	.3764
17.	Parlimentary procedures part of IA	.75	6	.9933
	General Experiences			
18.	More info.--Cluster/Exploration	2.81	2	.2434
19.	Workshops--Cluster/Exploration	2.007	2	.3665
20.	State plan for teaching model	6.26	6	.3920
21.	Sponsor a club	3.58	6	.7321
	Elementary Curriculum			
22.	Support general education obj.	.0004	1	.9828
23.	Provides realistic experiences	.0	1	1.0000
24.	Construct dimensional objects	.36	2	.8454
25.	Responsibilities of elem. teacher	4.14	6	.6578
26.	Expose to career opportunities	13.39	6	.0373*
	Junior/Middle Curriculum			
27.	Explore industry and world of work	1.23	2	.5400
28.	Indus., voc., and other pursuits	.02	1	.8961
29.	Provides intro.--goods and services	.003	1	.9570
20.	Opportunity for AIASA	6.20	6	.4012
	Senior/Mid-High Curriculum			
31.	Provides cult. and cons. experience	.27	1	.6004
32.	Pursue advanced study	.006	1	.9371
33.	Provide labor force instruction	3.36	2	.1860
34.	Provide leisure time instruction	.36	1	.5485
35.	Provide practical situations	1.10	1	.3910
36.	Provide basic skills for jobs	1.86	1	.1730
37.	Compliment vocational programs	.06	2	.9723
38.	Opportunity for AIASA	.66	2	.7204

*Significant at the .05 level
+Calculated by Fisher's Exact Probability Procedure

TABLE IV

CHI-SQAURE COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS AMONG ALL RESPONDENTS ACCORDING TO THEIR ATTAINED LEVEL OF EDUCATION

Item	Topic	X^2	df	Probability
	General Opinions			
8.	I.A. helps make career decisions	3.56	2	.1689
9.	Teachers should have ind. exp.	.92	4	.9210
10.	Course on organizing clubs	1.47	4	.8311
11.	Curriculum guides for new teachers	.05	1	.8195
12.	All progs. need advisory councils	11.13	4	.0251*
13.	AIASA-USOE's recognition is good	.001	1	.9750
14.	AIASA--integral part of curriculum	3.46	4	.4833
15.	Clusters at junior high	17.59	4	.0015*
16.	Beg. teachers have adequate trng.	.94	4	.9191
17.	Parlimentary procedure as part of IA	5.73	4	.2205
	General Experiences			
18.	More info.--Cluster/Exploration	1.07	2	.5856
19.	Workshops--Cluster/Exploration	.76	2	.6838
20.	State plan for teaching model	7.53	4	.1103
21.	Sponsor a club	6.38	4	.1725
	Elementary Curriculum			
22.	Support general educ. obj.			p> .1670+
23.	Provide realistic experiences			p> .2181+
24.	Construct dimensional objects	4.08	2	.1302
25.	Responsibility of elem. teacher	3.45	4	.4859
26.	Expose to career opportunities	2.46	4	.6517
	Junior/Middle Curriculum			
27.	Explore ind. and world of work	8.77	4	.0672
28.	Ind., voc., and other pursuits	.32	1	.5733
29.	Provide intro.--goods and services	.12	1	.7299
30.	Opportunity for AIASA	1.38	4	.8470
	Senior/Mid-High Curriculum			
31.	Provide cult. and cons. experiences	2.03	1	.1539
32.	Pursue advanced study	1.11	1	.2914
33.	Provide labor force instruction	.06	2	.9720
34.	Provide leisure time instruction	0.0	1	1.0000
35.	Provide practical situations	.001	1	.9808
36.	Provide basic skills for jobs	1.10	1	.2947
37.	Compliment vocational programs	3.87	2	.1443
38.	Opportunity for AIASA	4.78	4	.3107

*Significant at the .05 level
+Calculated by Fisher's Exact Probability Technique

TABLE V

CHI-SQUARE COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS AMONG ALL RESPONDENTS ACCORDING TO THEIR NUMBER OF YEARS HAVING TAUGHT INDUSTRIAL ARTS

Item	Topic	X^2	df	Probability
	General Opinions			
8.	I.A. helps make career decisions	4.27	2	.1183
9.	Teachers should have ind. exp.	8.45	6	.2059
10.	Course on organizing clubs	1.73	6	.9432
11.	Curr. guides for new teachers	.15	1	.6979
12.	All progs. need advisory councils	4.75	6	.5757
13.	AIASA-USOE's recognition is good	0.0	1	1.0000
14.	AIASA--integral part of curr.	2.90	6	.8213
15.	Clusters at junior high	10.58	6	.1022
16.	Beg. teachers have adequate trng.	3.75	6	.7101
17.	Parliamentary proced. as part of IA	6.07	6	.4150
	General Experiences			
18.	More info.--Cluster/Exploration	3.46	2	.1769
19.	Workshops--Cluster/Exploration	5.03	2	.0809
20.	State plan for teaching model	16.46	6	.0115*
21.	Sponsor a club	11.16	6	.0834
	Elementary Curriculum			
22.	Support general educ. obj.			p>.23
23.	Provide realistic experiences			p>.23
24.	Construct dimensional objects	1.12	2	.5700
25.	Responsibility of elem. teacher	9.37	6	.1539
26.	Expose to career opportunities	5.65	6	.4632
	Junior/Middle Curriculum			
27.	Explore ind. and world of work	6.79	2	.0335*
28.	Ind., voc., and other pursuits	0.0	1	1.0000
29.	Provide intro.--goods and services	0.0	1	1.0000
30.	Opportunity for AIASA	4.98	6	.5467
	Senior/Mid-High Curriculum			
31.	Provide cult. and cons. exp.	.04	1	.8437
32.	Pursue advanced study	0.0	1	1.0000
33.	Provide labor force instruction	2.47	2	.2909
34.	Provide leisure time instruction	0.0	1	1.0000
35.	Provide practical situations	0.0	1	1.0000
36.	Provide basic skills for jobs	.87	1	.3518
37.	Compliment vocational programs	1.09	2	.5794
38.	Opportunity for AIASA	1.54	2	.4621

*Significant at the .05 level
+Calculated by Fisher's Exact Probability Technique

TABLE VI

CHI-SQUARE COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS AMONG ALL RESPONDENTS ACCORDING TO THEIR PERCEPTION OF THE TYPE OF PROGRAMS THEY TEACH

Item	Topic	x^2	df	Probability
	General Opinions			
8.	I.A. helps make career decisions	2.03	2	.3625
9.	Teachers should have ind. exp.	.84	2	.6560
10.	Course on organizing clubs	.17	2	.9175
11.	Curr. guides for new teachers	.49	2	.7846
12.	All progs. need advisory councils	3.96	2	.1378
13.	AIASA-USOE's recognition is good	.03	1	.8592
14.	AIASA—integral part of curriculum	.05	2	.9733
15.	Clusters at junior high	2.02	2	.3651
16.	Beg. teachers have adequate trng.	1.66	2	.4361
17.	Parlimentary procedure as part of IA	3.13	2	.2090
	General Experiences			
18.	More info.--Cluster/Exploration	.37	2	.8301
19.	Workshops--Cluster/Exploration	.86	2	.6492
20.	State plan for teaching model	1.71	2	.4240
21.	Sponsor a club	.85	2	.6536
	Elementary Curriculum			
22.	Support general educ. obj.	.08	1	.7670
23.	Provide realistic experiences	.79	1	.3740
24.	Construct dimensional objects	3.77	2	.1515
25.	Responsibility of elem. teacher	1.54	2	.4635
26.	Expose to career opportunities	1.38	2	.8390
	Junior/Middle Curriculum			
27.	Explore ind. and world of work	2.24	2	.3259
28.	Ind., voc., and other pursuits	3.36	1	.0667
29.	Provide intro.--goods and services	.04	1	.8390
30.	Opportunity for AIASA	1.28	2	.5281
	Senior/Mid-High Curriculum			
31.	Provide cult. and cons. exp.	.36	1	.5489
32.	Pursue advanced study	.29	1	.5919
33.	Provide labor force instruction	2.25	2	.3239
34.	Provide leisure time instruction	.39	1	.5331
35.	Provide practical situations	.22	1	.6391
36.	Provide basic skills for jobs	0.0	1	1.0000
37.	Compliment vocational programs	.25	2	.8810
38.	Opportunity for AIASA	.74	2	.6920

*Significant at the .05 level
+Calculated by Fisher's Exact Probability Technique

TABLE VII

CHI-SQUARE COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS AMONG ALL RESPONDENTS ACCORDING TO THEIR LEVELS OF TEACHING INDUSTRIAL ARTS

Item	Topic	X^2	df	Probability
	General Opinions			
8.	I.A. helps make career decisions	4.75	4	.3144
9.	Teachers should have ind. exp.	12.54	6	.0509
10.	Course on organizing clubs	13.95	6	.0302*
11.	Curr. guides for new teachers	2.76	2	.2512
12.	All progs. need advisory councils	6.28	6	.3930
13.	AIASA-USOE's recognition is good	1.97	2	.3739
14.	AIASA--integral part of curr.	9.14	6	.1657
15.	Clusters at junior high	35.36	6	0.0000*
16.	Beg. teachers have adequate trng.	2.80	6	.8333
17.	Parlimentary procedure as part of IA	1.63	6	.9500
	General Experiences			
18.	More info.--Cluster/Exploration	.69	4	.7092
19.	Workshops--Cluster/Exploration	5.10	4	.2774
20.	State plan for teaching model	16.80	6	.0101*
21.	Sponsor a club	16.60	6	.0109*
	Elementary Curriculum			
22.	Support general educ. obj.	2.06	2	.3576
23.	Provide realistic experiences	.17	2	.9177
24.	Construct dimensional objects	6.05	6	.4178
25.	Responsibility of elem. teacher	3.52	6	.7419
26.	Expose to career opportunities	12.83	6	.0459*
	Junior/Middle Curriculum			
27.	Explore ind. and world of work	5.92	6	.1154
28.	Ind., voc., and other pursuits	4.16	2	.1245
29.	Provide intro.--goods and services	4.44	2	.1085
30.	Opportunity for AIASA	8.57	6	.1992
	Senior/Mid-High Curriculum			
31.	Provide cult. and cons. exp.	2.64	2	.2673
32.	Pursue advanced study	9.19	2	.0101*
33.	Provide labor force instruction	1.14	6	.7686
34.	Provide leisure time instruction	.01	2	.9911
35.	Provide practical situations	6.51	2	.0336*
36.	Provide basic skills for jobs	-	-	- #
37.	Compliment vocational programs	3.00	6	.8085
38.	Opportunity for AIASA	15.02	4	.0047*

*Significant at the .05 level
+Calculated by Fisher's Exact Probability Technique
#Would have to collapse further in which case would be same as data in the type of program category

TABLE VIII

CHI-SQUARE COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS AMONG ALL RESPONDENTS ACCORDING TO THEIR YEARS OF INDUSTRIAL EXPERIENCE

Item	Topic	X^2	df	Probability
	General Opinions			
8.	I.A. helps make career decisions	4.04	2	.1325
9.	Teachers should have ind. exp.	30.88	4	p < .0001*
10.	Course on organizing clubs	8.35	4	.0793
11.	Curr. guides for new teachers	.20	1	.6576
12.	All progs. need advisory councils	10.37	4	.0347*
13.	AIASA-USOE's recognition is good	0.0	1	1.0000
14.	AIASA--integral part of curr.	1.71	4	.7889
15.	Clusters at junior high	6.84	4	.1447
16.	Beg. teachers have adequate trng.	4.84	4	.3043
17.	Parlimentary procedures as part of IA	4.88	4	.2998
	General Experiences			
18.	More info.--Cluster/Exploration	2.69	2	.2608
19.	Workshops--Cluster/Exploration	4.66	2	.0972
20.	State plan for teaching model	1.50	4	.8272
21.	Sponsor a club	1.67	4	.7965
	Elementary Curriculum			
22.	Support general educ. obj.	-	-	p > .2135+
23.	Provide realistic experiences	-	-	p > .3497+
24.	Construct dimensional objects	2.77	2	.2500
25.	Responsibility of elem. teacher	2.56	4	.6341
26.	Expose to career opportunities	4.24	4	.3747
	Junior/Middle Curriculum			
27.	Explore ind. and world of work	2.52	2	.2833
28.	Ind., voc., and other pursuits	.14	1	.7089
29.	Provide intro.--goods and services	.45	1	.5042
30.	Opportunity for AIASA	3.85	4	.4260
	Senior/Mid-High Curriculum			
31.	Provide cult. and cons. exp.	0.0	1	1.0000
32.	Pursue advanced study	8.73	2	.0127*
33.	Provide labor force instruction	1.78	2	.4116
34.	Provide leisure time instruction	6.78	4	.1480
35.	Provide practical situations	.47	1	.4933
36.	Provide basic skills for jobs	-	-	p > .2543+
37.	Compliment vocational programs	.42	2	.8084
38.	Opportunity for AIASA	1.14	2	.5650

*Significant at the .05 level
+Calculated by Fisher's Exact Probability Technique

TABLE IX

CHI-SQUARE COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS BETWEEN INDUSTRIAL ARTS TEACHERS AND TEACHER EDUCATORS

Item	Topic	x^2	df	Probability
	General Opinions			
8.	I.A. helps make career decisions	-	-	.0650+
9.	Teachers should have ind. exp.	2.20	2	.1380
10.	Course on organizing clubs	6.20	2	.0450*
11.	Curr. guides for new teachers	-	-	.5720+
12.	All progs. need advisory councils	4.39	2	.1112
13.	AIASA-USOE's recognition is good	-	-	.4725+
14.	AIASA--integral part of curr.	6.85	2	.0325*
15.	Clusters at junior high	21.25	2	p< .0001*
16.	Beg. teachers have adequate trng.	1.34	2	.5119
17.	Parlimentary procedure as part of IA	.46	2	.7937
	General Experiences			
18.	More info.--Cluster/Exploration	.89	2	.3100
19.	Workshops--Cluster/Exploration	-	-	.0114+
20.	State plan for teaching model	8.27	2	.0160*
21.	Sponsor a club	12.72	2	.0017*
	Elementary Curriculum			
22.	Support general educ. obj.	-	-	.2255+
23.	Provide realistic experiences	-	-	p> .3786+
24.	Construct dimensional objects	-	-	p> .1042+
25.	Responsibility of elem. teacher	.62	2	.7345
26.	Expose to career opportunities	3.39	1	.0655
	Junior/Middle Curriculum			
27.	Explore ind. and world of work	-	-	.0276+*
28.	Ind., voc., and other pursuits	-	-	.0376+*
29.	Provide intro.--goods and services	-	-	.0690+
30.	Opportunity for AIASA	7.28	2	.0262*
	Senior/Mid-High Curriculum			
31.	Provide cult. and cons. exp.	-	-	.1849+
32.	Pursue advanced study	-	-	.0900+
33.	Provide labor force instruction	-	-	p> .1290+
34.	Provide leisure time instruction	-	-	p> .2969+
35.	Provide practical situations	-	-	p> .2078+
36.	Provide basic skills for jobs	-	-	p> .3255+
37.	Compliment vocational programs	-	-	p> .2230+
38.	Opportunity for AIASA	9.83	2	.0073*

*Significant at the .05 level
+Calculated by Fisher's Exact Probability Technique

TABLE X

TOPICS RANKED ACCORDING TO PERCEIVED IMPORTANCE WITHIN CLUSTERS CONTAINED IN THE STATE PLAN AS REPORTED BY ALL RESPONDENTS ACCORDING TO THE SEVEN CATEGORIES OF PERSONAL AND PROFESSIONAL CHARACTERISTICS

Topic No.	Topics	Years of Age	Level of Educ.	Years Taught I.A.	Type of Prog.	Level of Tchg.	Years of Ind. Exper.	Teachers vs. Teacher Educ.
	Construction Cluster							
1.	Design	1	1	1	1	1	1	1
2.	Preparing to Build	3	3	3	3	3	3	3
3.	Clearing a Site	8	8	8	8	8	8	8
4.	Excavation	10	9	9	9	9	9	9
5.	Comp. of Concrete	10	10.5	10.5	10.5	10.5	10.5	10.5
6.	Concrete--Form./Finish.	6	6	6	6	6	6	6
7.	Wood Frame Construction	2	2	2	2	2	2	2
8.	Electrical Wiring	5	5	5	5	5	5	5
9.	Plumbing	7	7	7	7	7	7	7
10.	Masonry	10	10.5	10.5	10.5	10.5	10.5	10.5
11.	Obtaining a Job	4	4	4	4	4	4	4
	Transportation Cluster							
1.	History of Transportation	2	2	2	2	2	2	2
2.	Land Transportation	4	3	4	4	4	4	4
3.	Local/Suburban Transit	6	6	6	6	6	6	6
4.	Highway Transportation	5	5	5	5	5	5	5
5.	Rail Transportation	9.5	9	9	9	9	9	9
6.	Unions--Collective Barganing	8	8	8	8	8	8	8
7.	Aerospace Transportation	7	7	7	7	7	7	7
8.	Water Transportation	9.5	10	10	10	10	10	10
9.	Future Transportation	3	4	3	3	3	3	3
10.	Occupations in Trans. Cluster	1	1	1	1	1	1	1
	Communication Cluster							
1.	Television Broadcasting	2	2	2	2	2	2	2
2.	Radio Broadcasting	5	5	5	5	5	5	5
3.	Publishing	7	7	7	7	7	7	7
4.	Graphic Arts	1	1	1	1	1	1	1
5.	Journalism	6	6	6	6	6	6	6
6.	Commercial Art	8	8	8	8	8	8	8
7.	Camera Tech./Film Proc.	4	4	4	4	4	4	4
8.	Fund. of Photo. Print.	10	10	10	10	10	10	10
9.	Dev. of the Telephone	11	11	11	11	11	11	11
10.	Telephone Communication	9	9	9	9	9	9	9
11.	Data Transmission	3	3	3	3	3	3	3
	Manufacturing Cluster							
1.	Research and Design	1	1	1	1	1	1	1
2.	Getting a Job	3	3	3	3	3	3	3
3.	Materials and Processes	2	2	2	2	2	2	2
4.	Casting and Molding	7	7	7	7	7	7	7
5.	Forming	9	9	9	9	9	9	9
6.	Separating	10	10	10	10	10	10	10
7.	Combining	11	11	11	11	11	11	11
8.	Assembling	5	5	5	5	5	5	5
9.	Finishing	8	8	8	8	8	8	8
10.	Ind. Prod. Man.	4	4	4	4	4	4	4
11.	Personnel Management	6	6	6	6	6	6	6

NOTE: The lower the number, the greater the importance

TABLE XI

MATCHED COMPARISON BETWEEN THE TYPE OF INDUSTRIAL ARTS PROGRAM BEING TAUGHT AND THE INDUSTRIAL ARTS TEACHER'S OPINION OF THEIR ADMINISTRATOR'S VIEW ABOUT THE ACTUAL TYPE OF PROGRAM BEING TAUGHT

Teachers' Opinions of Own Program	Compared to	Teachers' Opinions of Administrators' View of Program	Number of Respondents in each Category
AGREEMENT			
(a) Cluster/Exploration	.....	(a) Cluster/Exploration	7
(b) Traditional	.....	(b) Traditional	72
(c) Combination of a & b	.....	(c) Combination of a & b	51
		Total Responding	130
SEMI-AGREEMENT			
(a) Cluster/Exploration	.....	(c) Combination of a & b	2
(b) Traditional	.....	(c) Combination of a & b	14
(c) Combination of a & b	.....	(a) Cluster/Exploration	8
(d) Combination of a & b	.....	(b) Traditional	12
		Total Responding	36
NONAGREEMENT (MISMATCH)			
(a) Cluster/Exploration	.....	(b) Traditional	3
(b) Traditional	.....	(a) Cluster/Exploration	0
		Total Responding	3

TABLE XII

MEAN COMPARISON OF OPINIONS ABOUT INDUSTRIAL ARTS BETWEEN INDUSTRIAL ARTS TEACHERS AND TEACHER EDUCATORS

Item	Topic	Mean of All Respondents	Mean Responses of Teachers	Mean Responses of Teacher Educators
	General Opinions			
8.	I.A. helps make career decisions	4.25	4.21	4.60
9.	Teachers should have ind. exp.	3.65	3.68	3.32
10.	Course on organizing clubs	3.40	3.32	4.04
11.	Curr. guides for new teachers	4.18	4.16	4.32
12.	All progs. need advisory councils	3.16	3.20	2.76
13.	AIASA-USOE's recognition is good	4.04	4.02	4.20
14.	AIASA--integral part of curriculum	3.31	3.28	3.56
15.	Clusters at junior high	3.24	3.13	4.16
16.	Beg. teachers have adequate trng.	3.01	2.99	3.20
17.	Parlimentary procedures as part of IA	3.02	3.01	3.16
	General Experiences			
18.	More info.--Cluster/Exploration	3.77	3.73	4.08
19.	Workshops--Cluster/Exploration	3.93	3.88	4.40
20.	State plan for teaching model	3.26	3.20	3.80
21.	Sponsor a club	3.12	3.04	3.80
	Elementary Curriculum			
22.	Support general educ. obj.	4.22	4.17	4.64
23.	Provide realistic experiences	4.29	4.25	4.56
24.	Construct dimen. objects	4.11	4.06	4.52
25.	Responsibility of elem. teacher	3.09	3.06	3.32
26.	Expose to career opportunities	3.79	3.75	4.20
	Junior/Middle Curriculum			
27.	Explore ind. & world of work	4.00	3.93	4.60
28.	Ind., voc., & other pursuits	4.11	4.05	4.60
29.	Prov. intro.--goods & services	4.21	4.15	4.72
30.	Opportunity for AIASA	3.49	3.45	3.88
	Senior/Mid-High Curriculum			
31.	Provide cult. & cons. experience	4.19	4.17	4.44
32.	Pursue advanced study	4.21	4.18	4.52
33.	Provide labor force instruction	4.14	4.15	4.04
34.	Provide leisure time instruction	4.21	4.21	4.24
35.	Provide practical situations	4.11	4.09	4.28
36.	Provide basic skills for jobs	4.33	4.31	4.52
37.	Compliment vocational programs	4.07	4.06	4.08
38.	Opportunity for AIASA	3.74	3.65	4.24
		3.80*	3.76*	4.09*
		3.01-4.33**	2.99-4.31**	2.76-4.64**

*The mean of the mean scores

**Range of mean scores

NOTE: The higher the mean, the greater the agreement; the lower the mean, the lesser the agreement